Managing Cassandra Workloads at Scale

DataStax and VMware Tanzu®

VMware Tanzu™   DATASTAX

Our Partnership

DataStax and VMware Tanzu help organizations manage modern applications on Apache Cassandra with a powerful hybrid database with 100% uptime, low latency, and linear scalability.

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DataStax on VMware Marketplace

VMware Tanzu Overview

About DataStax

Today, most modern applications run on Kubernetes, the leading orchestration platform for distributed microservices. But even before Kubernetes' arrival, when modern applications needed a distributed database backend to achieve the required fault tolerance, scalability, and performance, Apache Cassandra came out to answer the call. So why not run Cassandra on Kubernetes? Get the performance you need while simplifying operational complexity.

That's why DataStax engineered DataStax Enterprise (DSE), a hybrid cloud powerhouse database built on Cassandra, to run on Kubernetes. And that's why DataStax has certified DSE on VMware Tanzu, the Kubernetes distribution that adds enterprise grade security and identity management, and application and workload management across clouds.

DataStax Enterprise (DSE), built on Apache Cassandra™, is a powerful hybrid database for modern applications, well known for 100% uptime, low latency, and the ability to handle massive data at planetary scale. DSE delivers capabilities used by the best internet companies, and adds enterprise features hardened by demanding, modern use cases in e-commerce, customer loyalty, banking, IoT, supply chain, etc. at global leading companies, including 40 of the Fortune 100.
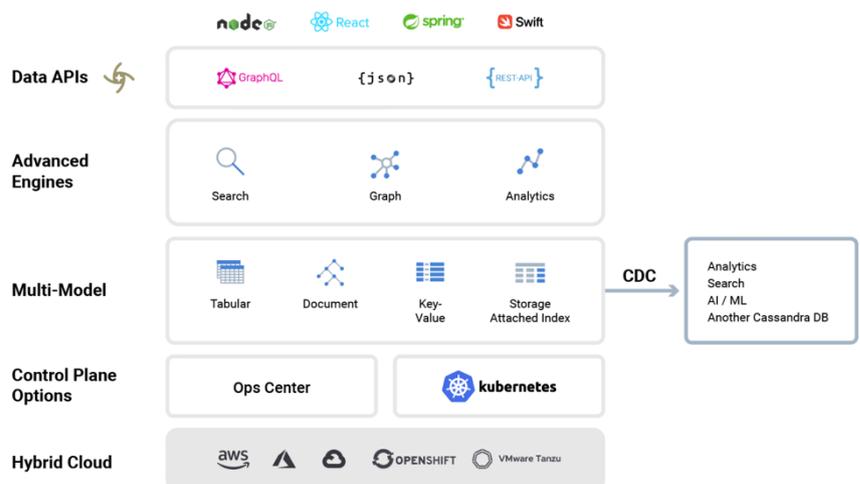

Figure 1: DataStax Enterprise (DSE)

vmware®

About DataStax

DataStax makes Cassandra databases accessible and manageable by providing monitoring, security, and operations features needed for a robust, enterprise-grade deployment.

About VMware Tanzu

VMware Tanzu enables customers' software supply chain to be more secure - all the way from app development to having their apps running in production.

VMware Tanzu

VMware Tanzu enables customers' software supply chain to be more secure - all the way from app development to having their apps running in production. Moreover, the portfolio offers a cohesive developer experience across any Kubernetes to speed application development and delivery cycles. It's all about modern apps - powered by VMware Tanzu.

Benefits of DataStax on VMware Tanzu

With DataStax Enterprise and VMware Tanzu, customers can expect true, infinite horizontal scale to support mission-critical applications. DataStax Enterprise is purpose-made to support the same exact scalability, partition tolerance, and high availability needs that Tanzu Kubernetes Grid (TKG) is built for.

For enterprises that want to self-manage Cassandra clusters, DSE is the only open, hybrid stack built on Apache Cassandra that reduces operational burden, avoids vendor lock-in, and unleashes developer productivity. It amplifies the benefits of Cassandra with superior performance and trusted security.

High Availability and Linear Scalability On Prem, in Public Clouds, or across Hybrid Environments

Built-in high availability in your cluster and data centers, across clouds, whether in your own private cloud, public clouds, or hybrid environments, without being locked into any cloud vendor. Leveraging VMware TKG, operators gain global visibility, scalable operations, and consistent policy management to their modern apps by centralizing Kubernetes across teams and clouds.

Superior Performance NoSQL on a Single Platform

Blisteringly fast write and read transactions for NoSQL workloads.

Increased Productivity, with Peace of Mind

Gain all the benefits of Cassandra®, with increased productivity for operators when running DataStax Enterprise on VMware TKG. Allow developers to move fast with self-service access to Kubernetes in their chosen environment, with security and policy guardrails in place.
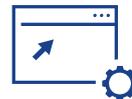
Cluster Lifecycle Management

Provision DSE on VMware Tanzu Kubernetes Grid clusters and manage the lifecycle of the clusters across environments.

| High Availability | Superior Performance | Increased Productivity | Customer Lifecycle Management |

DataStax on VMware Tanzu

DataStax on VMware Tanzu is a highly conformant, production-grade deployment.

Deploying DataStax on VMware Tanzu

VMware and DataStax collaborated on a joint Reference Architecture that details how to deploy DataStax on Tanzu Kubernetes Grid (TKG). The architecture guide covers topics such as Kubernetes requirements and cluster layout for DataStax.

By following the Reference Architecture, you should be able to create a highly performant, production-grade deployment of DataStax Enterprise with VMware TKG. However, you should not feel constrained by the exact path in the document if your specific use cases lead you to a different deployment architecture. Design decisions in the architecture paper reflect the main design issues and the rationale behind a chosen solution path, and if necessary, can help provide rationale for any deviation.

The Reference Architecture discusses several different cluster layouts. The level of availability and redundancy required by the workloads being deployed will determine the topology of the clusters—from a simpler, single cluster running in just one availability zone, to a more complex deployment of multiple clusters distributed all over the world, either on a single cloud provider or across multiple cloud providers.
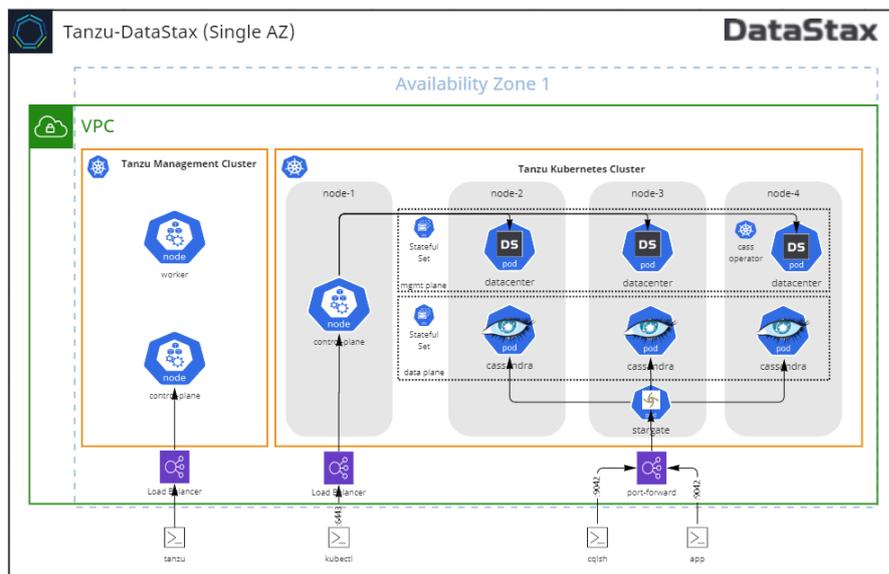

Figure 2: DataStax and VMware Tanzu Reference Architecture Diagram

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For more information on DataStax, visit DataStax Enterprise webpage or contact the DataStax team here. Learn more about VMware Tanzu on the product portfolio webpage or by reaching out to your VMware Tanzu representative